

Problem: Several U.S. Customs and Border Protection (CBP) non-intrusive cargo scanning systems are reaching the end of their service life and are exhibiting reduced performance and rising maintenance costs. Scanning systems use technology that needs to be refreshed to maintain parity with the smuggling threat. The lack of actionable intelligence to target cargo for inspection diverts resources from higher risk shipments, while reducing the efficient flow of low risk/legitimate cargo, costing U.S. importers billions in lost revenue per year. Moreover, the volume of inbound cargo to U.S. ports-of-entry (POE) is projected to increase from year to year, while CBP manpower will not increase proportionately. As such, new or improved technology can be a force multiplier or enabler to help address these challenges.

Solution: This project develops hardware and software upgrades for the legacy cargo scanning units, infusing state-of-the-art technology, which will enhance their detection performance and extend their service life. This provides CBP with an enhanced capability to detect the transport of contraband, counterfeit merchandise, or invasive species in inbound and outbound cargo at the POE. This project develops techniques and technology for collecting additional cargo security data, while also investing in analysis methods to transform new and existing cargo security data into actionable intelligence.



Mobile Non-Intrusive Inspection operations

Impact: The Department of Homeland Security Science and Technology Directorate's efforts will enhance CBP's effectiveness in detecting contraband at POE, while increasing the throughput of legitimate cargo. Upgrades to CBP cargo scanning systems will improve performance, while significantly reducing operational and maintenance costs. The POE Based Technology project will also increase the availability of evidence, enabling enhanced trade compliance enforcement, allowing for the collection of millions of dollars of currently uncollected tariffs and duties. In addition, improved targeting and improvements in container security,

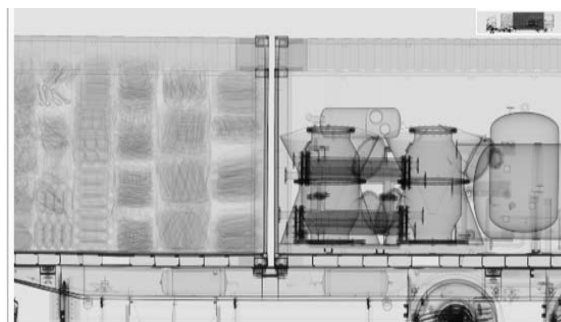
through use of technology, will reduce the number of containers requiring scanning and/or manual inspection, increasing the throughput of legitimate cargo.



Fixed Portal Non-Intrusive Inspection

Current and Future Investments

- **Common Viewer Workstation.** CBP has been procuring commercial off-the-shelf scanning equipment from a variety of vendors each with a different operating procedure and a different graphical user interface which drives training and maintenance costs. CBP needs to standardize GUIs and procedures. This effort will (1) develop a common workstation with a common graphical user interface; (2) develop interfaces with both stationary and mobile non-intrusive inspection systems; (3) develop a wireless communications infrastructure to support data sharing, workload load sharing and rapid information exchange; and (4) develop threat detection algorithms for contraband (e.g. bulk currency).
- **Improve Performance of NII Detectors and/or Sources.** The goal is to improve the performance of non-intrusive inspection systems to dramatically increase CBP's ability to interdict contraband without slowing commerce. Thrust areas include (1) data analytics/system architecture; (2) automated threat recognition; (3) advanced imaging systems; and (4) standardized NII metrics.



Non-Intrusive Inspection System image